

REMARKS

Claims 1-17 and 19-23 are pending in the application.

Telephone Interview Summary

The undersigned attorney thanks Examiner Chandrakumar for the courteous telephone interviews conducted on July 29, 2008 and August 1, 2008.

With respect to the rejection under 35 U.S.C. § 102(a) based on U.S. Patent No. 6,936,727 (Sutton et al.), applicants' undersigned representative noted that applicants were aware of this commonly-assigned patent and that the claims were originally drafted to distinguish the disclosure in this publication. Applicants' representative then pointed out the distinctions between the requirements of the process set forth in claim 1 and the disclosure in Sutton et al. Although no agreement was reached, the Examiner encouraged applicants' representative to submit an argument on the record noting the distinctions between the claimed process and the disclosure in Sutton et al. Accordingly, the distinctions noted during the interview are set forth in detail below.

Rejections Under 35 U.S.C. § 112, First and Second Paragraphs

Applicants acknowledges the Office's indication that the previous rejections under 35 U.S.C. §112, first and second paragraphs have been overcome.

Rejection of Claims 1-17 and 19-23 Under 35 U.S.C. § 102(a)

Applicants respectfully request reconsideration of the rejection of claims 1-17 and 19-23 under 35 U.S.C. §102(a) as

anticipated by the disclosure in U.S. Patent No. 6,936,727 to Sutton et al. (Sutton et al.).¹

In order for a reference to anticipate a claim, it must disclose each and every element of the claim (See MPEP §2131). As discussed with the Examiner in the above-noted telephone interviews, applicants respectfully submit that Sutton et al. fail to disclose each and every element of the process defined in independent claim 1.

Independent claim 1 is directed to a process for the production of an ether optionally with a diol and/or a lactone, by reaction of a corresponding organic feed material selected from mono C₁ to C₄ alkyl esters of C₄ to C₁₂ unsaturated dicarboxylic acids and/or anhydrides, di-(C₁ to C₄) alkyl esters of C₄ to C₁₂ unsaturated dicarboxylic acids and/or anhydrides, and/or lactones of C₄ to C₁₂ unsaturated hydroxycarboxylic acids. The process includes, *inter alia*:

- (a) supplying a stream comprising at least a portion of an organic feed material to a pre-reactor zone comprising catalyst and contacting the feed with a hydrogen containing stream in the pre-reactor zone such that at least some of the carbon carbon double bonds are saturated; and
- (b) vaporising the at least partly saturated feed into the hydrogen containing stream in a vaporising zone.

¹ Applicants note that U.S. Patent No. 6,936,727 B2 (issued August 30, 2005) and the publication of the underlying U.S. application as US 2004/0199026 A1 (published October 7, 2004) are not prior art with respect to the subject application under 35 U.S.C. §102(a) to the extent that the claimed subject matter is entitled to the December 16, 2003 priority date. Applicants therefore assume that the Office's reliance on 35 U.S.C. §102(a) is based on International Publication No. WO 03/006446, corresponding to U.S. Patent No. 6,936,727 B2, which published January 23, 2003.

Sutton et al. do not disclose vaporizing an at least partly saturated feed into a hydrogen containing stream as required by step (b) of claim 1. Rather, Sutton et al. disclose vaporizing a feed stream and supplying the vaporized feed stream to a reaction zone comprising a catalyst and under conditions to allow hydrogenation and dehydration. For example, in the process illustrated in Fig. 2, Sutton et al. disclose vaporizing a feed stream fed via line 19 in first vaporization zone 20, subjecting the vaporized stream to hydrogenation and dehydration in a first reaction zone 25 and vaporizing additional fresh feed fed via line 28 by and into the resulting intermediate reaction mixture in second vaporization zone 27. That is, the feed streams subjected to vaporization in Sutton et al. are not partly saturated streams resulting from contact with hydrogen in the presence of a catalyst as called for in claim 1. Nowhere does Sutton et al. disclose the process of claim 1 including vaporizing an at least partly saturated feed into a hydrogen containing stream. To the extent that the Office maintains the rejection of the pending claims under 35 U.S.C. §102(a) based on the disclosure in Sutton et al., applicants request that the Examiner provide a specific citation to the portion of the disclosure of Sutton et al. describing vaporizing a partly saturated feed. In the absence of such disclosure in Sutton et al., it is respectfully submitted that claim 1 and claims 2-17 and 19-23 depending directly or indirectly therefrom are novel over the cited reference and the rejection under 35 U.S.C. §102(a) must be withdrawn.

Claims 1-17 and 19-23 are Patentable in View of Sutton et al.

The Office has not made nor articulated a basis for a rejection of the pending claims under 35 U.S.C. §103(a) based on the disclosure in Sutton et al. to which applicants might respond at this time. However, applicants note that one goal of the claimed process is minimizing cycle gas requirements, which generally requires operation at relatively high temperatures that can lead to increased by-product formation. Vaporization of a partly saturated feed as required in the claimed process advantageously reduces the cycle gas requirements for vaporization, without requiring operation at relatively high temperatures that can lead to increased by-product formation. Moreover, vaporization of a partly saturated feed as required in the claimed process provides a reduction in adiabatic temperature rise across the main vapor phase reactor. In this manner, the instantly claimed process allows for an increase in cycle gas loading without an unacceptable increase in temperature across the reactor. More particularly, as compared to conventional processes, the process of the present invention allows for an increase in cycle gas loading for a given reactor exit temperature. See, for example, paragraphs [0013] through [0018] of applicants' published specification, Publication No. US 2007/0088169 A1.

Thus, the process of the claimed invention provides a method for addressing the often competing concerns of cycle gas requirements, by-product formation, and process efficiency. Although Sutton et al. recognize the goal of minimizing cycle gas requirements for vaporization of the feed, and the relationship between cycle gas requirements, reaction

temperature and by-product formation (See, for example, column 2, lines 57-67 and column 3, lines 1-6 and lines 28-32 of Sutton et al) nowhere does the cited reference disclose or suggest the solution of vaporizing an at least partly saturated feed as called for in the pending claims.

In view of the above, applicants respectfully submit that claims 1-17 and 19-23 are novel and patentable over the cited reference.

Rejection of Claims 1-17 and 19-23 under the Doctrine of Nonstatutory Obviousness-type Double Patenting

As set forth above, applicants respectfully submit that the pending claims are patentable over the disclosure of Sutton et al. More particularly, the pending claims require an affirmative limitation (i.e., vaporizing an at least partly saturated feed stream) neither disclosed by Sutton et al. nor set forth in the claims of U.S. Patent No. 6,936,727. Accordingly, applicants respectfully request withdrawal of the rejection of claims 1-17 and 19-23 under the doctrine of nonstatutory obviousness-type double patenting in view of claims 1-15 of Sutton et al.

Reconsideration and allowance of all pending claims are respectfully requested.

Should any issues remain unresolved after consideration of these remarks, applicants request that the Examiner contact the undersigned attorney prior to issuance of a further Office action.

Applicants request an extension of time up to and including August 7, 2008, for filing a response to the Office action dated

March 7, 2008. Applicants authorize the Commissioner to charge any government fees in connection with this response to Deposit Account No. 19-1345.

Sincerely,

/Vincent M. Keil/

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